

## 2 Service Plan Development Process

### 1 Overview

Figure 4 demonstrates the main components for developing a service plan.



Figure 4 The main components of the process of developing a Service Plan

## 2 Issue Identification and Goal Setting

### *Goals and Objectives of Planning*

The first step is to identify and confirm the issues to be addressed by the service planning exercise. Examples of common issues include:

- Insufficient capacity to respond to need or demand
- Inadequate scope and range of services
- Poor access to the services provided
- Low quality and efficiency of service provision
- Inadequate structures, systems and technology required for service provision
- Need to improve operations in service delivery
- Need to improve the benefit or profitability of a service

The purpose for undertaking the planning exercise is translated into goals and objectives. Goals are broad statements of intent that set the direction for the plan. Objectives identify and describe the measurable outcomes of each goal expected to be achieved from implementation of the service plan. Objectives are stated in singular form with a defined outcome that is linked back to the goals of the service being investigated. An example of a goal and its accompanying objectives is:

Goal: The health service improves access for older patients.

Objectives: The service will have the capacity to admit persons over the age of 65 with condition X.

Persons over the age of 65 shall be admitted to the service within 30 minutes.

### *Details*

<b>Activity</b>	Setting goals and objectives to the service plan
<b>Rationale</b>	To identify the desired future state(s) to result from undertaking the service planning exercise
<b>Description</b>	<ul style="list-style-type: none"><li>▪ Identify and categorise the desired future state(s), establish consensus within the planning team</li><li>▪ Translate the desired future state(s) into tangible goals and objectives</li></ul>
<b>Outcome</b>	Clear direction for planning process
<b>Result</b>	A Goal and Objectives Statement in the initial part of the Service Plan

## 3 Contextual Analysis

Assess relevant government, corporate and organisational policies to ensure that planning accounts for regulations, guidelines and broader organisational, national or regional health directions. Some relevant documents to be included and reviewed are:

- Ministerial statements
- Legislation and government documents
- Corporate and strategic directions plans
- Policy statements from government and relevant organisations
- Practice standards and guidelines
- National, state and regional health authority plans

Where there are conflicting views or interpretation of policy, the matter is to be clarified within the planning and governance teams, and clear documentation provided to support the planning position.

### Details

<b>Activity</b>	Contextual Analysis
<b>Rationale</b>	To analyse, assess and reference relevant government, corporate and organisational policies, standards and guidelines for the services being investigated
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Perform a comprehensive literature research to gather all relevant documents</li> <li>▪ Consult with the stakeholders and planning team for their policy views and strategic directions</li> </ul>
<b>Outcome</b>	Regulations, guidelines, standards, policies and broader system goals are accounted for
<b>Result</b>	Output document of service planning process is in alignment with overall system health directions and related policies, guidelines and practice standards.

## 4 Stakeholder Engagement

A range of participants with differing views and priorities, as either individuals or representatives of groups, have the ability to significantly influence the plan’s direction and productions (Green, 2007). Stakeholder identification and consultation establishes a participatory process for the incorporation of their expectations into planning. Positive engagement and effective stakeholder management can facilitate and guide the engagement process; undertaken poorly though, stakeholders can in instances, have the power to veto or delay the plan (Eagar et al., 2001, Varvasovszky and Brugha, 2000).

Critical to the success of planning are the relationships between health planners with stakeholders. Active consultation with stakeholders may occur at different stages of the process, each with implications for decision making, quality of the information and sense of ownership created; and hence the successful implementation of the plan (Green, 2007).

### Stakeholder analysis

Techniques such as stakeholder analysis and political mapping can be employed to assess the relative importance of stakeholders’ influence (Varvasovszky and Brugha, 2000, Reich, 1994).

An example stakeholder analysis performed in a Stakeholder Matrix is shown below in Table 1, adapted from NSW Department of Environment and Primary Industries, 2013. Stakeholders are considered against two variables – importance and influence. A third variable can also be assigned to the stakeholders indicating the degree of support or opposition to the plan.

		Importance of stakeholder			
		Unknown	Little/no importance	Some importance	Significant importance
Influence of stakeholder	Significant influence	<b>C</b>		<b>A</b>	
	Somewhat influential				
	Little/no influence	<b>D</b>		<b>B</b>	
	Unknown				

Table 1 Stakeholder matrix

The boxes A to D represent key stakeholders of the plan. Box A contains stakeholders with a high degree of influence and who are also of high importance. Good working relationships should be cultivated with these stakeholders to gain continual support. Box B contains stakeholders of high importance but with low influence. These stakeholders can sometimes be marginalised groups or other users of the service who have little representation and voice; they will require particular attention during the planning process to ensure their interests are protected. Box C contain stakeholders with high influence towards but whose interests may not align with the plan's goals. These groups represent a potential risk to the process and require close monitoring and management. Box D stakeholders of low influence and importance to the plan are considered low priority (Department of Environment and Primary Industries, 2013).

### Details

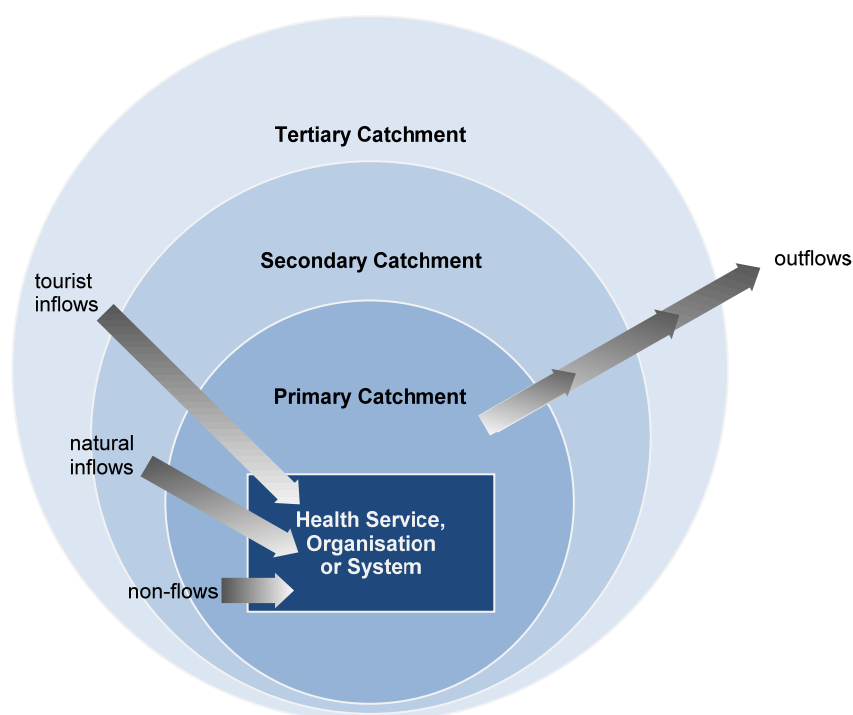
<b>Activity</b>	Stakeholder Engagement
<b>Rationale</b>	To gain the perspective and interests of a range of stakeholders within the plan's scope and assess their relative importance and influence
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Identify stakeholders relevant to plan's scope</li> <li>▪ Perform stakeholder analysis</li> <li>▪ Consult and engage stakeholders using a variety of techniques</li> </ul>
<b>Outcome</b>	Greater depth and breadth of understanding of issues affecting or impacting stakeholders consulted
<b>Result</b>	Issues Paper to outline issues arising from stakeholder groups consulted

## 5 Catchment Identification

A catchment is defined as the population of a selected geographic area for which the services are to be provided. Catchment selection identifies the location of the service and the proximity of the population who are to use the services. Catchment boundaries are defined by administrative boundaries, population distribution, service delivery patterns and transport networks. Catchments vary in size depending on the type of services provided and the pool of population it is directed at.

The catchment description should at least identify its primary, secondary and tertiary boundaries. A primary catchment is the location and its local population in which the service is delivered. Patients being treated by the services from the primary catchment are referred to as "non-flows". Residents leaving the primary catchment for the same services in a location outside of the catchment are identified as "outflows". Residents travelling from secondary or tertiary catchments into the primary catchment for services are defined as "inflows".

Secondary catchments are sometimes referred to as the boarder catchment due to having an adjacent proximity to the primary catchment. It will have a proportion of residents flowing into the primary catchment for services, referred to as "natural flows". Tertiary catchment residents are people who use a service in a location quite distant from their usual place of residence, requiring them to travel significant distances to the service, and are referred to as "tourist flows". This is diagrammatically represented in Figure 5.



**Figure 5 Catchment identification and types of patient movement**

A brief description of the physical geography, history of the area and local economy assists in describing the key features of the catchment. A map is useful for showing the area of the catchments, major towns, suburbs, transport links and the location of complementary or competitive services. Mapping the primary, secondary and tertiary catchment boundaries with their overlapping areas better illustrates the regions and their associated populations. The catchment is to be agreed prior to proceeding with the market and gap analysis stage of planning.

### Details

<b>Activity</b>	Catchment Identification
<b>Rationale</b>	To identify the location of the service and the proximity of the population who are to use the health service(s)
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Define the location of the service(s)</li> <li>▪ Define the primary, secondary and tertiary catchment areas for the service(s)</li> <li>▪ Agree upon the catchment size and population</li> <li>▪ Identify the population that the service(s) will serve in each catchment including main population of primary catchment and inflows</li> <li>▪ Include a brief description of the geography, history and local economy of the area for each catchment</li> <li>▪ Include a map if necessary</li> </ul>
<b>Outcome</b>	Catchments are well defined and consensus within planning team is reached
<b>Result</b>	Planning process for service(s) is specific to defined catchments

## 6 Needs Assessment

The need for services is identified by consultation with experts in the selected service area. Experts are informed consumers or providers of the service. These experts, alongside an experienced planner, provide the context for assessing and understanding need validating the statistics to be used for the demand analysis. Needs may also be identified and verified by broader communities, service consumers, researchers and planners (Eagar et al., 2001).

Need identification is facilitated and informed by available information, which can be broadly classified into two categories- qualitative and quantitative. Quantitative information is available in the form of geographical, demographic, socioeconomic, epidemiological, health status, health service and clinical research data. Qualitative information comes in the form of needs, perceptions and preferences of stakeholder groups. The overall needs assessment process can be illustrated by Figure 6, adapted from Eagar et al., 2001.

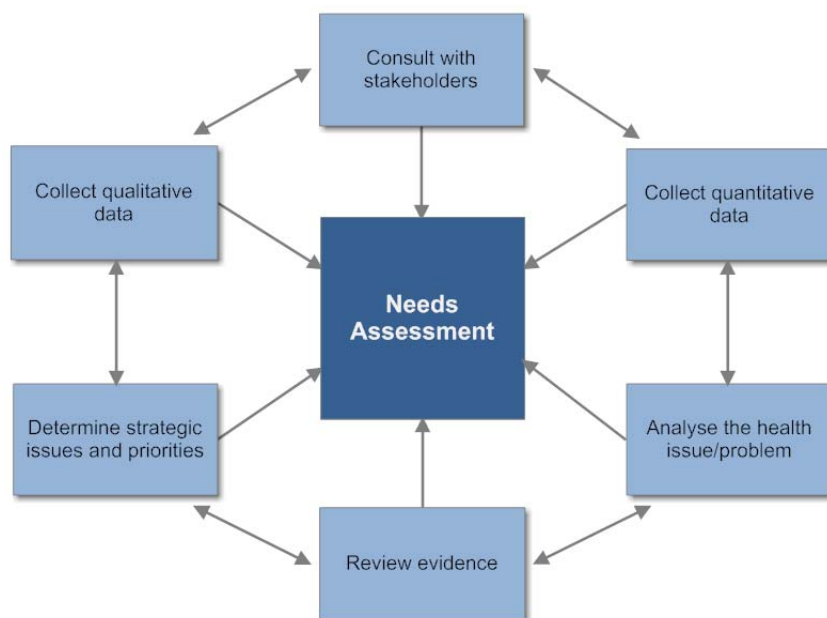


Figure 6 Needs assessment process

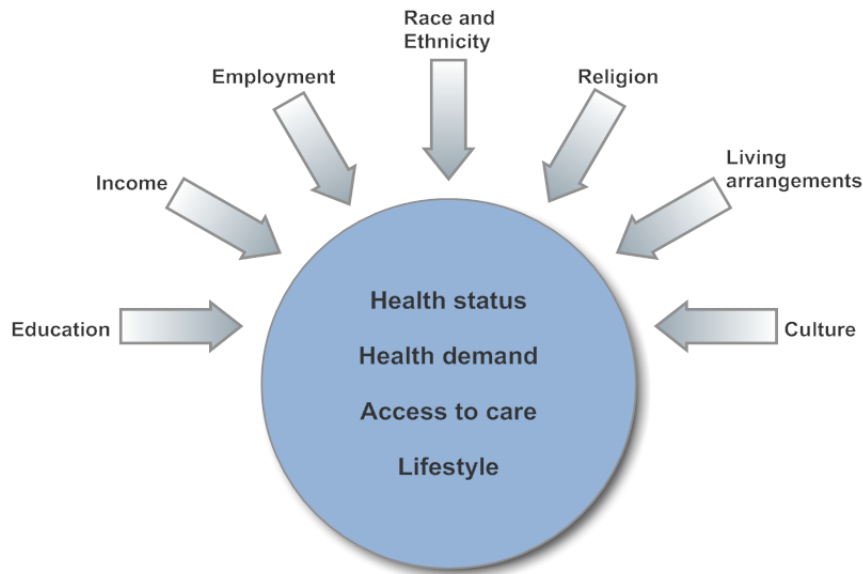
### *Quantitative data*

#### Demographic and socioeconomic data

Demographic and socioeconomic statistics are important precursors of health and health status and form the basis for need estimates. Commonly examined statistics include:

- Population size
- Distribution by age, sex and location
- Migration
- Ethnicity and languages
- Disability, housing and marital status
- Education and literacy levels
- Employment status, occupation and income
- Estimates of visiting populations to major commercial and tourist centres
- Composite indices of socioeconomic status

Trends in the demographic and socioeconomic data are equally important to inform of future changes in service needs. Religious, education and cultural characteristics have important implications for health and require careful analysis. The socioeconomic characteristics and lifestyle factors of a catchment population significantly impacts on their health status, demand for services and access to care. Figure 7 illustrates some of the socioeconomic factors which are to be considered.



**Figure 7 Socioeconomic factors considered in identification of health needs**

### Epidemiological data and health status

Accurate health status data relating to incidence and prevalence of health conditions and their determinants are frequently difficult to obtain. Instead a picture of health is often created using data from registries, large-scale surveys and health service utilisation collections. Analysis of available health indicators is necessary to inform the planning team of areas in need.

Health status data collected, interpreted and analysed should include:

- Mortality rates
- Morbidity surveys and health service utilisation rates
- Disability rates
- Fertility rates
- Infant, maternal and child health measures
- Burden of disease studies
- Environmental and personal health risk factors

These data are standardised against a reference population for age and gender to assist valid assessment. Where possible health needs are confirmed against published cohort time series studies in the literature. Cohort time series studies measure and report a series of successive data points at uniform time intervals.

### Health service data

Health service utilisation data is an accepted surrogate measure of population health needs. It provides a greater detail of information on the expressed needs of the catchment population, as well as the availability and efficiency of health services. It is routinely collected and reported by hospitals and health services for administration and financial reasons in many countries (Eagar et al., 2001). It is common for the following information to be collected from patients at contact with a health service:

- Age
- Sex
- Place of residence

- Ethnicity
- Occupation
- Language
- Reason for admission
- Date and time of admission
- Diagnoses
- Procedures and interventions
- Discharge status

Data is usually available for a range of services types including acute, non-acute, outpatients and home visits. Attendance, stay periods and occupancy rates of health services can be used to assess the population's access to and use of healthcare.

### Geographical data

Information is required about the physical characteristics of the catchment and its existing infrastructure (Green, 2007). Analysis of the geographical area will highlight the challenges, limitations, risks and opportunities that the catchment presents in the delivery of health services. Particular environmental features which can affect health or service delivery should be highlighted; these include rivers, mountain ranges and climatic conditions. Information regarding wider services infrastructure ensures health services align with other sectors such as transport modes and routes, communication and technology infrastructure and utilities.

The geographic catchment information to be included is:

- Size, boundaries and major and minor centres of the planning area
- Significant geographical entities
- Distribution of communities (e.g. spread across districts, regions, local government areas)
- Location in relation to other main populated areas and referral centres with travel times
- Transport corridors and systems

This information is best supplemented with relevant maps.

### *Qualitative data*

Health needs may be collected qualitatively from expert opinions, on the basis of experience and qualification. Experts are usually service providers, strong community advocates or health researchers. The type of information extracted from these opinion leaders may relate to service and care standards, acceptable health status levels, or the typical and required levels of service. Qualitative assessment of need may also be built upon by evidence-based guidelines which are published or supported by esteemed and nationally or internationally recognised professional organisations; these may translate into modified service needs for acceptable clinical provision (Eagar et al., 2001, Spiegel and Hyman, 1998).

The need expressed by a community is also a valid source of qualitative information, and is obtained from consultations, discussion, public meetings, community surveys or key informant surveys, keeping in mind the resources required, advantages and disadvantages of each type of assessment (Spiegel and Hyman, 1998).



## Details

<b>Activity</b>	Needs Assessment
<b>Rationale</b>	To identify the health needs of the catchment population using quantitative and qualitative techniques and in consultation with experts in the selected health service(s)
<b>Description</b>	<ul style="list-style-type: none"><li>▪ Consultation with clinical experts, consumer representatives, researchers and service managers</li><li>▪ Describe demographic and socioeconomic characteristics of the population</li><li>▪ Assess region/nation-wide epidemiological and health status data</li><li>▪ Collect and analyse health service data</li><li>▪ Describe geographic factors impacting on need</li><li>▪ Supplement quantitative data with opinions and needs as expressed by health professionals, service providers and the greater community</li></ul>
<b>Outcome</b>	Comprehensive health needs profile is available for the selected catchment
<b>Result</b>	Needs statement

## 7 Existing Services

Existing services or supply of health services are analysed using several approaches, each giving differing results. These should then be jointly reviewed to gain a better understanding of the characteristics and number of existing services. These approaches are:

- Health service facilities survey – questionnaires to collect data by function, capacity and condition
- Health service utilisation assessment – based on standard classifications and measures reported in service utilisation data
- Model of care and patient flow review – established by normative review of existing systems and service provider consultations

### Health Service Facilities

Existing services can be reviewed by built function, capacity and condition. Services are classified and assessed by type, number and available resources, including: community based services, disease programs, traditional practice, mobile services, clinics, health centres, and the various types of hospitals which exist within a country, e.g. community hospitals, tertiary care hospitals, rehabilitation and non-acute care hospitals (Thomas, 2003). This can then be further broken down into specialty areas or departments and the types of personnel, rooms and equipment used to treat patients. Information on the service facilities' capacity, location, ownership, hours of operation, health personnel employed and support services available is essential to provide a comprehensive picture of the resources currently supplied (Green, 2007).

An overview of the current provision of health services should include the following (Statewide Services Development Branch, 2005):

- Public sector
  - Hospitals – location, role delineation, service profile, bed numbers by type, bed days, care episodes, condition of facility and staff numbers by full time equivalents. Full time equivalents are units that indicate the workload of employed persons for comparison across various contexts; an FTE of 1.0 means that the person is equivalent to a full-time worker.
  - Outpatient and community health services- role delineation/service types, locations, non-inpatient occurrences, condition of facility and staff numbers by full time equivalents. (Refer to Part B for role delineation)
  - Aged care hostels and nursing homes- location, place/bed numbers and type, occupancy levels condition of facility and staff numbers by full time equivalents
  - Supported transport and accommodation available to patients and staff

- Private sector
  - Hospitals – location, role, service profile, bed numbers by type, bed days, care episodes, condition of facility and staff numbers by full time equivalents
  - Day centres – location, role, service profile, bed numbers by type, bed days, care episodes, condition of facility and staff numbers by full time equivalents
  - Primary care clinics – service profile by occurrences, stay periods and consultation/treatment room numbers and staff numbers by full time equivalents
  - Specialty care clinics – service profile by occurrences, stay periods and consultation/treatment room numbers and staff numbers by full time equivalents
  - Other organisations providing significant health or health-related services- service profile, activity levels and clinical capacity

It is important to recognise that the service supply is not directly translatable to service utilisation. Simply capturing the intended built capacity and resources of a service facility do not wholly describe its function and use. For example, an oncology ward may have 23 beds which would be classed as a supply of 23 inpatient beds for cancer treatment. In reality the beds may be taken by a mix of medical patients with diagnoses unrelated to oncology. Although this information is difficult to link, data regarding health service utilisation classifications in the form of casemix groups such as Diagnosis-Related Groups (DRGs) can be sourced and analysed to prevent misinterpretation and misclassification.

### *Health Service Utilisation*

Assessment of hospital and health service activity data to describe distribution and utilisation of health services across the catchment area is essential. The assessment will take into account the prescribed role of each service entity, the match between its approved role and, where possible, the services provided as defined by service type and speciality. Differing from theoretical supply, utilisation data indicates the actual level of activity within the system (Thomas, 2003).

Casemix systems such as DRGs classifying hospital episodes based on diagnosis, procedures and discharge status relate the type of patient treated to their clinical condition and resources used during an episode of care. Casemix data can be grouped by service type (acute, emergency or non-acute care), service mode (medical, surgical or procedural), episodes, stay periods, stay types (outpatient, sameday, overnight) and into specialities, providing a sound understanding of services being utilised (Thomas, 2003). Changes in service utilisation over time or trends in the clinical distribution and occupancy provide further dimensions to understanding utilisation.

### *Health Service Delivery Model*

The model of care employed must be taken into account as it directly relates to a service's capacity to effectively respond to need. Models of care are usually applied within service entities and several may apply within the same speciality to treat a variety of patients. Models are constantly changing with different service structures and processes existing across the entire spectrum of healthcare. A shift towards decreasing length of stay and the adoption of medical and digital technology are examples significantly impacting on and changing the models used to deliver care to patients.

Models of care detail the structure, process and practice of care to patients. Structure describes the arrangement of the service facility, resources and systems. It shows the relationships between care providers, treatment areas, and accommodation, technology and information systems available for care. Process identifies the patient's entry into the care environment, describes what happens to them once they enter into and exit from care. This is referred to as the "patient journey" and identifies the events and resources necessary for care. Practice describes the roles and functions of personnel delivering care. Figure 8 illustrates an example of a model of care for Emergency Departments.

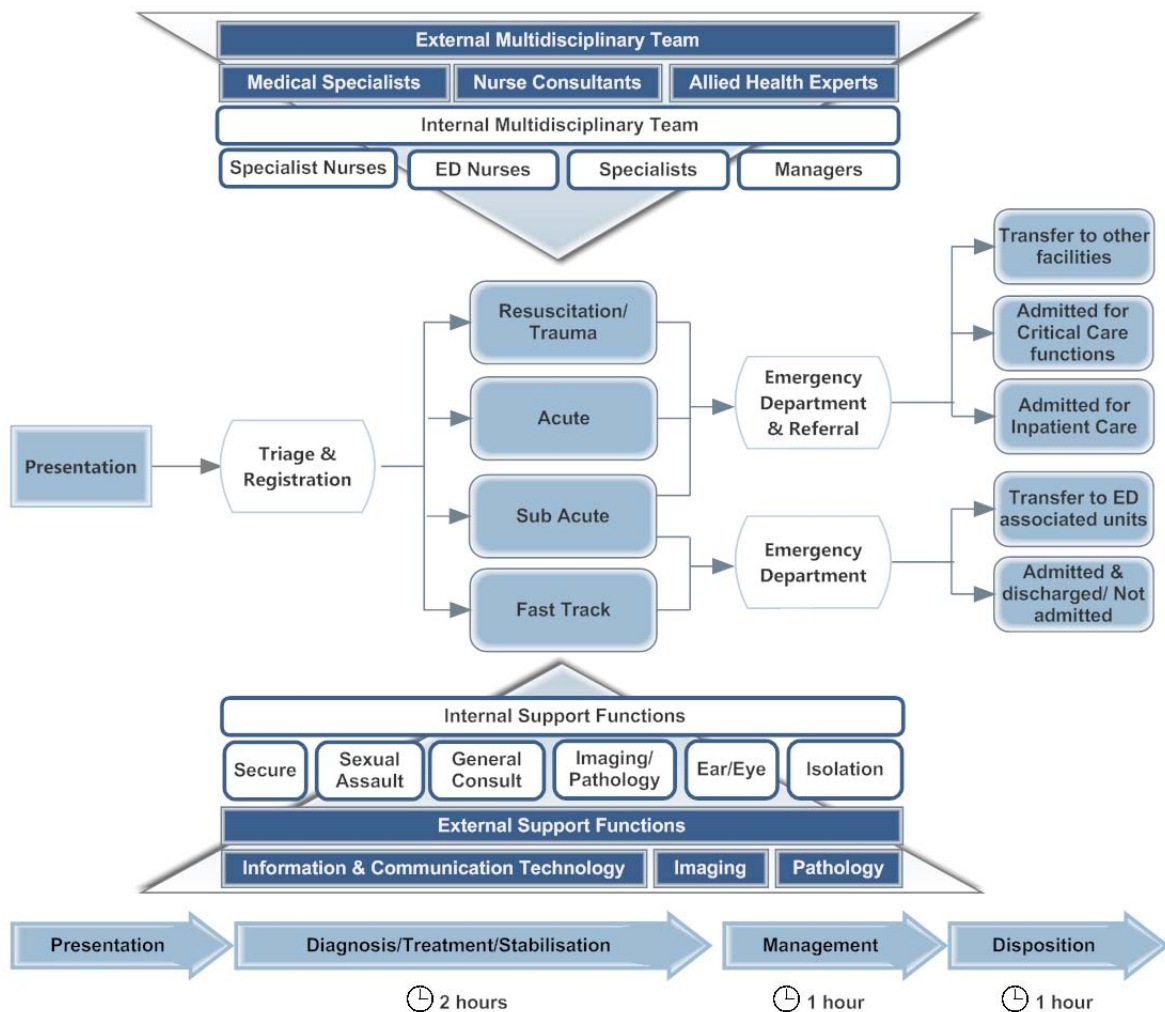


Figure 8 An ideal patient journey with streaming to models of care within emergency departments

Information and data is gathered and analysed to map the patient journey across available services within a catchment and document the current model of care for each service delivered at all service entities. This information may be obtained from observational surveys and interviews with key providers assess the prevailing model and to discuss service delivery issues and opportunities in preparation for engineering a revised model where required.

### Details

<b>Activity</b>	Identification of existing services
<b>Rationale</b>	To identify current health service supply, health service utilisation and service delivery models
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Identify current health service supply</li> <li>▪ Describe the services currently provided across the area</li> <li>▪ Collect current health service utilisation data and analyse patterns and trends</li> <li>▪ Describe the service models being used to deliver patient care</li> <li>▪ Discuss health service delivery issues with key stakeholders and staff</li> </ul>
<b>Outcome</b>	A clear understanding of current health service supply and utilisation and the models of care
<b>Result</b>	A profile of current health services

## 8 Demand Projections

Demand projections are best obtained using statistical means by either parametric or non-parametric methods and performed for a timeframe of five to twenty years, generally using annual figures with enough years to reliably estimate trends and fit projection equations. Some common methods for projecting future demand include trend extrapolation, benchmarking and population-specific demand studies.

### *Trend extrapolation*

Several years of historic data may be examined to establish a trend which is then extrapolated to future years. This is a simple method with the advantage of speed, useful in expansion of existing services where there is little or no intention to fundamentally reform the services and the continuation of trends can be intuitively judged and reasonably estimated; as a general rule, data of less than five consecutive years or older than five years should not be used for this method.

### *Benchmarking*

This method employs the simple process of applying the experiences of a service in one location to another similar location, usually in the form of published rates, e.g. inpatient beds per number of population. It does not take account of trends and may not be specific to the catchment's needs.

### *Population-specific computer modelling*

This is considered the most detailed and scientifically accurate methodology for demand projections, requiring the skills of an expert planner to prepare and analyse the study. Projections are performed for the population by service type, modes and specialties by healthcare activity and resources. The data representing the healthcare activity of a reference population with satisfactory health access, outcomes and costs is employed. Customisation and manipulation of relative utilisation ratios derived from the reference and study populations ensure more catchment-specific results; the utilisation ratios are applied to the current and projected population of the study's catchment to determine demand at a more specific specialty level.

It is recognised that it may not always be possible to perform the demand projections due to lack of availability of reliable reference data. In these cases, appropriately weighted supply data using trend extrapolation or benchmarking may be used. Expert planners with a sound understanding of data limitations and statistical projection techniques are a valuable resource to producing credible projections. Demand projection modelling is best conducted in conjunction with information from an array of national and international healthcare databases and literature.

Projections may be used to show:

- Service needs and patient access
- Episodes and length of stay by service types, modes and specialties
- Sufficiency level and flow adjustments
- Occupancy and sufficiency rates
- Service mix and volumes
- Potential to change models of care due to projected changes in service mix, utilisation and efficiency
- Key planning unit configurations and subsequent facility planning unit size and layout
- Future staffing and recurrent resources estimation

Forecasts are established from projections in consultation with clinical and service delivery experts to best approximate future service requirements. There is no single correct forecast, with multiple trends coexisting and possibly conflicting with one another, Figure 9 illustrates the variety in projection outcomes possible based on low, medium or high variants. Assumptions taken into account in establishing forecasts must be clearly stated and understood (Eagar et al., 2001), each prediction should be supplemented with its underlying rationale and methodology.

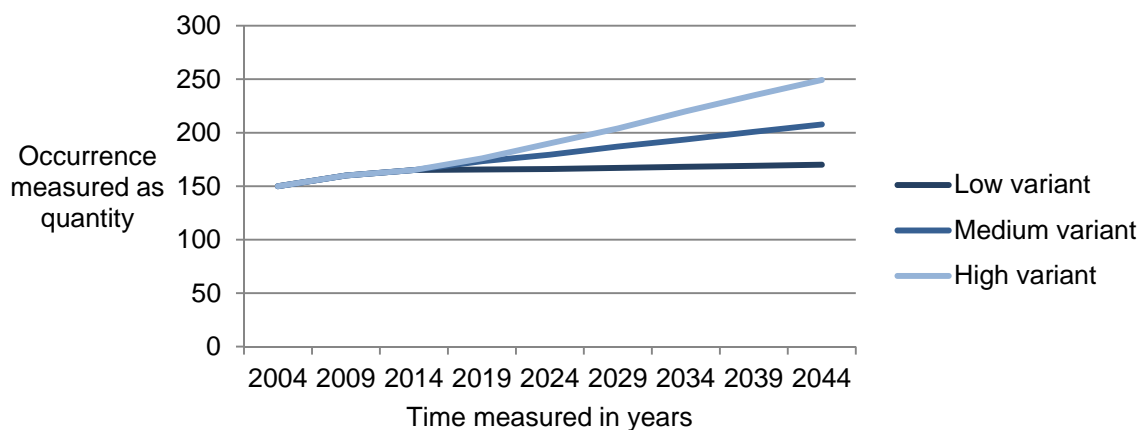


Figure 9 Service occurrence plot illustrating different projection outcomes based on different assumptions

Some assumptions to be considered and stated include the following, adapted from Eagar et al., 2001 and Thomas, 2003:

Type of factor	Examples
Sociodemographic	Age, sex, racial and ethnic characteristics, marital/relationship status, education, housing, mobility, lifestyle and health status
Economic	Employment, occupation and industrial characteristics, income, income distribution, inflation and consumer spending, national reimbursement and financing mechanisms
Political	Government stability, ideological climate and policy priorities
Environmental	Resources use and impact, transportation
Technological	Developments in information technology and telecommunications, changes in medical technology

Table 2 A checklist of assumptions to be considered when projecting and forecasting for health services

### Details

<b>Activity</b>	Demand Projections
<b>Rationale</b>	To identify future demand for health services by service types and specialties
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Define the base, target years and intervals for demand projections</li> <li>▪ Obtain appropriate population projections for the catchment</li> <li>▪ Consult and identify health service data for the defined catchment</li> <li>▪ Use a projection technique to project the future health service demand in the projected population</li> <li>▪ Produce forecasts based on projections adjusted and verified in expert consultation with service specialists</li> </ul>
<b>Outcome</b>	A detailed statistical table of demand projections by service type, mode and specialty and agreed measures
<b>Result</b>	Health Service Demand Profile

## 9 Gap Analysis

This component of the service planning is derived from the findings of the previous two components: “Existing Services” and “Demand Projections” to identify the gap between what health services are currently provided and what additional services need to be provided in the future to accommodate to the population’s need.

The demand forecasted subtracted from service supply will identify gaps in the current roles, mix and supply of health services, and identify the changes in service capacity required. Supply estimates may be adjusted at this time to account for additional services being planned or under development by other service providers. The gaps identified through this process will provide evidence for service areas requiring investment to meet future health needs.

The gap between supply and demand can then be used as an input for service procurement:

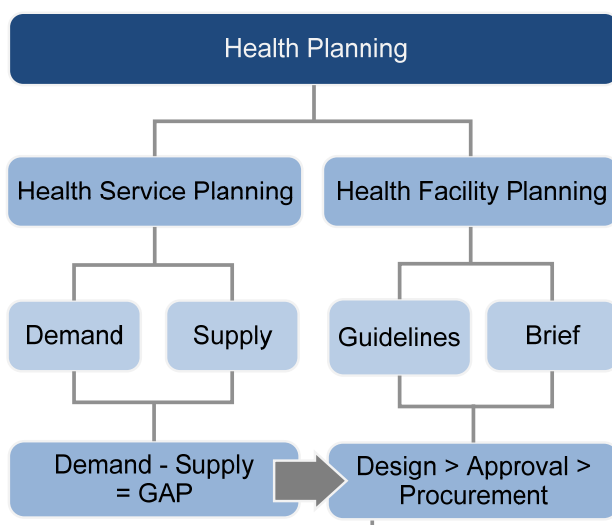


Figure 10 Gap analysis used to inform health facility planning procurement

### Details

<b>Activity</b>	Gap Analysis
<b>Rationale</b>	To identify the required changes to service capacity to address the health service need and demand to target year
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Compare the findings from existing and proposed services and demand projections</li> <li>▪ Identify the gap in health services and quantify as planning units including a mix of overnight beds, same day hospital beds, operating theatres, diagnostic units and ambulatory care units</li> </ul>
<b>Outcome</b>	A detailed table of required health services and planning units to meet future health demands
<b>Result</b>	Service Gap Profile

## 10 Service Model Selection

Following the identification and specifications of gaps in services, a number of service model options are generated to identify the best option to address future needs. Service models to be considered should be based on best practice standards and be evidence-based. The options presented should assist the selection of the most suitable model to provide protection against unachievable future states, translate uncertainties into manageable situations and create a framework for maximising organisation learning and flexibility (Eagar et al., 2001).

### *Options Development*

Develop and review several options to meet the gap in services. The options may range from expanding capacity within the same service delivery models to adopting more efficient models that accommodate the extra capacity required within available facilities. In development of options the following should be considered:

- Benchmarks – comparison of current models to models in other identical services that have achieved an excellent status
- Health improvement – in quality, effective service delivery and changes in practice, technology and therapies
- Performance – the preferred service model is a model that provides best performance in cost, quality and time dimensions
- Level of benefit achieved

The preferred service model selection process should involve key stakeholders and decision makers, involving initial quantitative approaches with defined criteria to short list options followed by qualitative review and analyses to select a preferred model.

Using a set of criteria addressing clinical, social, political and environmental factors, service model selection can be performed on the basis of need, but this often leads to unachievable resource requirements, at the expense of other opportunities. Economic evaluations of service models can be performed; the main approaches are: cost-benefit analysis, cost-effectiveness analysis and cost-utility analysis.

Whilst economic analyses provide the most rigorous approach, this may not necessarily be performed early in the selection process due to resource, time, stakeholder and political constraints. In these cases, a more qualitative approach to selecting the preferred option may suffice. It should be noted that due to the wide scope of planning inputs, in some instances the preferred service model may already be prescribed by policy, organisational preferences or strong user expectations.

Working with stakeholders, service model options are mapped according to their ability to address the initial established goals and objectives. Criterion should be defined relating directly to the objectives and their relative weighting assigned to each, as not all objectives are equally important. This approach performed with key stakeholders is useful to ascertain consensus and active discussion regarding each option's virtues and weaknesses. Amongst the defined criteria, the acceptability, feasibility and ease of implementation of each option should also be considered (Eagar et al., 2001).



Criterion	Weighting (out of 5)	Service Model 1	Service Model 2	Service Model 3
Criteria 1 impact on health improvement	5	(3) 15	(2) 10	(3) 15
Criteria 2 affordability	4	(2) 6	(3) 9	(2) 6
Criteria 3 consistency with government policy	3	(3) 9	(2) 6	(4) 12
Criteria 4 community acceptability	3	(3) 9	(1) 3	(4) 12
Criteria 5 provider acceptability	2	(2) 4	(2) 4	(3) 6
Criteria 6 impact on continuity of care	2	(1) 2	(2) 4	(2) 4
<b>TOTAL SCORE</b>		<b>45</b>	<b>36</b>	<b>55</b>

Explanations of procedures used in the table:

1. Six criteria are established which are consistent and reflect goals and objectives of undertaking planning process
2. Weighting is assigned (between one and five) for each of the criteria based on relative importance
3. Each service model is assigned a score (out of five) for each criteria (see bracketed numbers)
4. Scores are multiplied by agreed weighting
5. Weighted scores are added to give total comparable score for each service model

**Table 3 An example of formal selection of service model**

Transparency in the decision making process facilitates implementation and acceptance, though it can be difficult to achieve at a national, state or regional level due to the diversity of stakeholders' positions and priorities. As subjective judgments will always be involved in the selection of the preferred service model, the expertise of an expert planner ensures the process is well-managed.

### Details

<b>Activity</b>	Service Model Selection
<b>Rationale</b>	To identify the service model to best address the health service gap identified
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Develop service model options to address future demand for services</li> <li>▪ Consider benchmarks, health improvement, performance and overall benefits achieved by each service model</li> <li>▪ Consult with the stakeholders on the options and undertake formal selection procedures</li> <li>▪ Select the preferred service model</li> </ul>
<b>Outcome</b>	Preferred service model selected
<b>Result</b>	Preferred service model description



## 11 Proposed Service Profile

The selected service model is then translated into a service profile. This can be performed by quantifying the necessary physical, personnel and system resources required to deliver the service.

The facility resources are described as Key Planning Units (KPU) which are the units directly allocated to patient care and include beds, chairs, rooms, cubicles, units, machines, devices and other equipment required and differentiated by service type, mode and specialty.

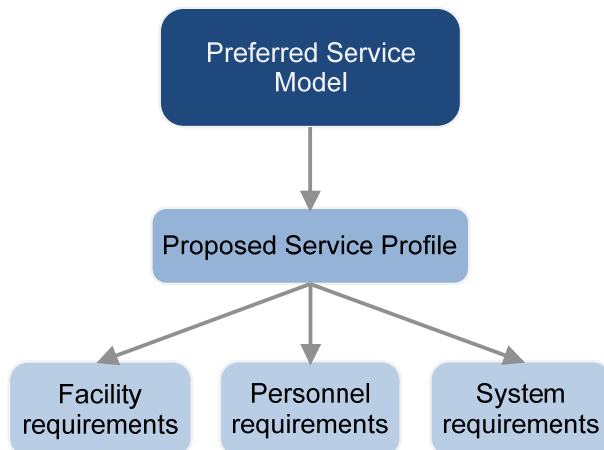


Figure 11 Translation of preferred service model into quantifiable service requirements

### Details

<b>Activity</b>	Proposed Service Model Profiling
<b>Rationale</b>	To translate the selected service model into service profile by quantifying all necessary requirements
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Define specific resources needed in terms of physical, personnel and systems required</li> <li>▪ Quantify the physical requirements as KPUs in forms of beds, chairs, rooms, cubicles, units, machines and devices by service type, mode and specialty</li> </ul>
<b>Outcome</b>	Quantities of physical, personnel and system required
<b>Result</b>	Proposed service profile description

## 12 Operational Considerations

The preferred service model and its service profile are used to describe functional requirements for the operation of the service.

### Location

The physical location of the service under the planning process should be identified.

### Hours of Operation

The hours of operation for each service entity must be established, this helps determine the staffing requirements. Whilst generally an acute healthcare facility operates 24 hours and seven

days a week, other service entities such as outpatients may operate in normal business hours and exclude weekends and public holidays.

### *Legislation and Policy*

It is important that service planning takes into account regulations impacting on the service's operation when developing the operational framework. Factors such as infection control, health and safety, disability access and ecological impacts are to be considered and documented where required.

### *Staff and Organisational Structure*

An organisation structure will define the formal lines of authority that exist between managers and staff to coordinate efforts of each organisation or department in achieving the service's operation. Individual services or departments may also have clinical plans specific to their area of practice. An organisation or service structure will assist in specifying the staff requirements of the service, including numbers, mix, qualifications and expertise required.

Human resource management input is appropriate at this point in the process, depending on the type and magnitude of the change brought about by the plan, particularly in estimating supply and demand of personnel and establishing policies which aim to minimise the mismatch between the two (Green, 2007).

A proposed staffing profile is developed with the number of personnel, titles and qualifications defined for each workforce category, including specific skills and training required where appropriate. Workforce planning ensures the right number of personnel with the necessary skills and competencies are available to deliver the proposed range of services (Green, 2007). Staff planning should take into account:

- The supply of adequately trained staff, affected by gains in newly trained staff or losses
- The demand in staff through paid positions, incorporating both a recognised need for the trained staff as well as the capacity to pay them

Whilst the demand of staff can be identified locally at an organisation level, the supply is affected by a series of factors as shown in Figure 13 including: migration, training positions available, and levels of productivity which may be improved by investments in information technology, as well as death and retirement.

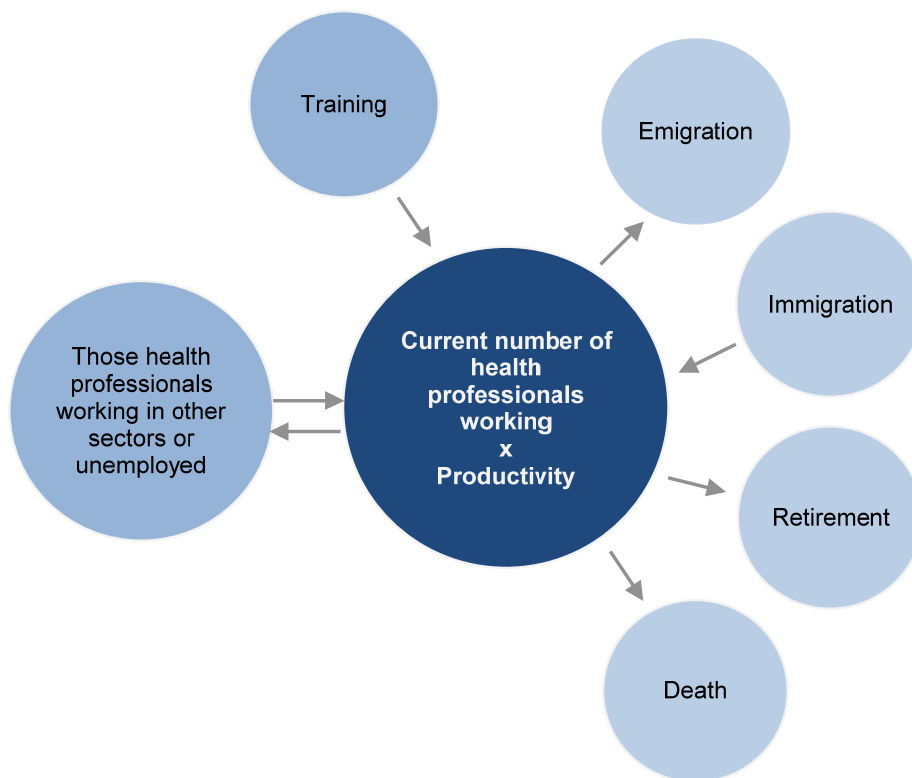


Figure 12 Effective supply of health professionals

### Details

<b>Activity</b>	Consider operational needs of the preferred service model and related service profile
<b>Rationale</b>	To identify and consider various operational components including: location, hours of operation, regulations, organisational structure and staffing, to operate services efficiently
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Consult relevant stakeholders to identify location and hours of operation</li> <li>▪ Define management structure and determine staff requirements</li> <li>▪ Assess personnel and expertise supply and demand</li> <li>▪ Determine appropriate action to match personnel demand and supply over course of plan</li> </ul>
<b>Outcome</b>	Operational considerations of service profile taken into account
<b>Result</b>	Detailed documentation staff requirements according to hours of operation, personnel plan and management structure where relevant

## 13 Service Relationships

The delivery of the proposed service needs to be considered in the context of similar or related services. Planning should assess linkages to other health services both within the governing organisation or region and within the general health system as a whole, incorporating any facilities providing services of a complementary nature to ensure coordination. This can be visually illustrated using a Relationship Diagram or by other means.

### Relationship Diagram

A Relationship Diagram is one way to visually represent the relationships between each service delivery area and each support area. When creating a relationship diagram, the process can help the planning team analyse the links between aspects of a complex system or organisation. Its benefits are evident when trying to identify an area for the greatest improvement, and when implementing a service plan to a complex organisation with many operating entities. An illustrative relationship diagram is provided in Figure 14.

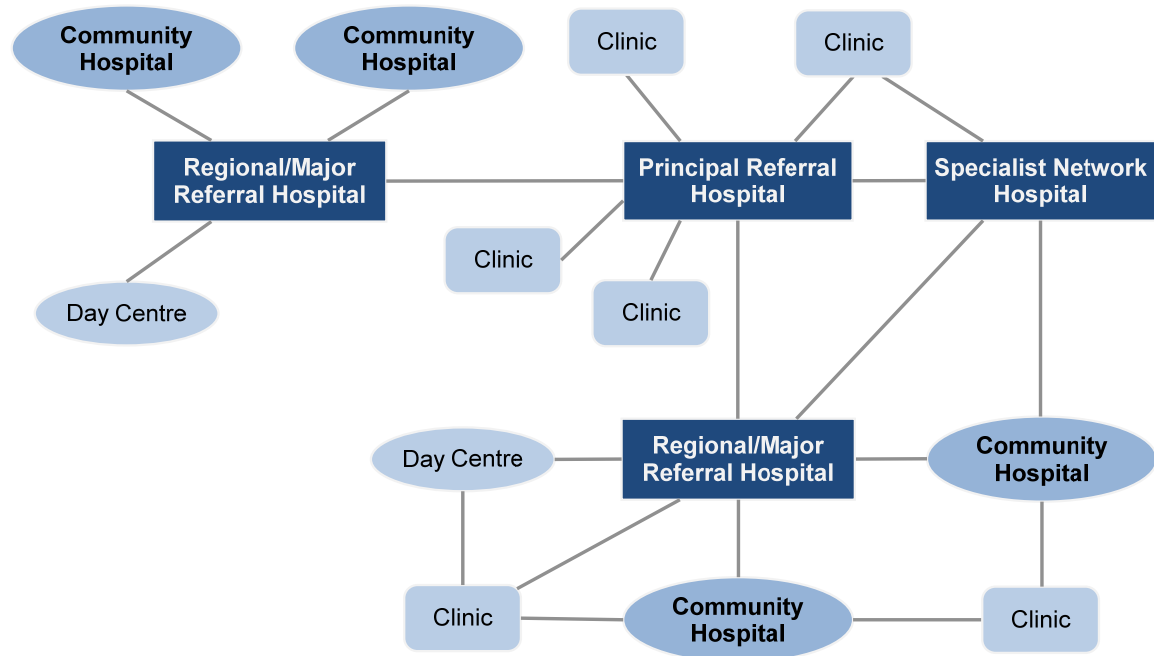


Figure 13 An example relationship diagram for a health network

The final relationship diagram should be verified with all stakeholders for entities, their relationships with one another and how they relate to one another, for accuracy and consensus.

### Details

<b>Activity</b>	Services and their relationships to one another
<b>Rationale</b>	To identify all service entities and demonstrate the relationships with one another
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Identify the service entities</li> <li>▪ Briefly profile their services and capacity if unknown</li> <li>▪ Develop a relationship diagram to show the identified groups</li> <li>▪ Describe the potential channels of patient referral and transfer between health services depending on the services provided</li> </ul>
<b>Outcome</b>	Comprehensive knowledge of other health services within the area and where linkages may occur and a diagram showing relationships of services in a detailed view
<b>Result</b>	Documentation of potential channels of patient movement between health services and Relationship Diagram

## 14 Financial Assessment

One of the final steps in the planning process is budgeting; a vital step in the process, as resource allocation is a major tool to planning, significantly affecting its capacity to effect change. A rolling plan may be used to make realistic annual allocations as part of a longer-term plan of several years. As much as possible, finance representatives or other personnel with authority to affect monetary resources should be involved in planning so as not to disassociate the two which can lead to delays and incrementalist changes in resources or re-prioritisation according to finance staff (Green, 2007).

A capital and recurrent budget is to be determined for the preferred service model. The budget should identify current services, proposed new services and the difference between the existing and proposed. Savings or additional funds should be identified to determine the financial impact of the plan.

The proposed budget should be clearly separated into recurrent and capital categories in the following format:

<b>Recurrent</b>	Staff Goods Services Maintenance Loan/Debts
<b>Capital</b>	Planning Services Construction Furnishings, Fixtures, Fittings and Equipment Major Equipment and Information Technology
<b>Impact</b>	Savings Additional funds

**Table 4 Example of a simple budget**

An assessment for the available sources of funding is performed to identify the methods in which the proposed service changes are to be resourced. Funds may include revenues, subsidies, and savings from efficiencies. The budget and funding strategy must be supported by evidence that it is realistic and achievable.

A sample checklist adapted from Green, 2007, for costing items is as follows:

Item	Capital	Recurrent
Buildings	Construction costs, land, purchase	Maintenance, small buildings, rent, rates, depreciation
Equipment and furnishings	Purchase of large new items	Maintenance replacement, hire, depreciation, small equipment items
Transport and travel	New vehicles	Maintenance, replacement, fuel, hire
Communications and information technology	Computers and internet, radio, telephone including installation	Maintenance, operating costs
Energy	Generator, solar panels, electricity connection to electric grid	Oil and other fuels
Water, sanitation, waste disposal	Installation, building costs	Maintenance
Food equipment	Kitchen	Food costs for staff/patient
Housekeeping	Equipment and buildings	Housekeeping supplies
Medical and laboratory supplies equipment	Theatre, diagnostic, treatment, buildings	Reagents and drugs for outpatients and inpatients, clinics
General administration	Office furniture, computers and other hardware	Stationery, record system, software and maintenance
Personnel	Initial training	Salaries and on-costs (pensions, statutory payments), refresher and ongoing training
Consultancy services	For project preparation	For specialists services
<b>SOURCE OF FUNDING</b>		
	Loans, subsidies, equity	Revenue, subsidies, savings

Table 5 Sample checklist for capital and recurrent budgets

### Details

<b>Activity</b>	Financial Assessment
<b>Rationale</b>	To determine a capital and recurrent budget for the proposed services
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Estimate capital and recurrent costs</li> <li>▪ Determine savings or investments required</li> <li>▪ Identify sources of funds where growth is required</li> </ul>
<b>Outcome</b>	Comprehensive breakdown of expected resource allocations within the preferred service model
<b>Result</b>	Budget proposal to accompany preferred service model

## 15 Performance Assessment

To ensure the final service model addresses the goals and objectives of the planning process adequately, clear and measurable performance indicators should be formulated. These indicators should clearly identify any constraints or resources required to achieve the agreed service model and align with those issued by higher governing authorities where they apply, e.g. the local health authority, state or a corporation's Board of Governors.

Well-documented performance indicators and their associated targets, resource allocations, personnel responsible, and designated time frame, ensure that the plan will be more readily implemented and monitored (Eagar et al., 2001). The documentation of set targets and performance indicators also allows for improved communication of the service plan to organisation personnel and sets realistic and achievable operational targets towards which staff can contribute.

### Details

<b>Activity</b>	Performance assessment
<b>Rationale</b>	To set measurable and attainable performance indicators with accompanying targets, resource allocations, responsible personnel and time frame
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Identify performance indicator for each strategy of the Service Plan</li> <li>▪ Negotiate realistic targets, resource allocations and time frames with personnel responsible and involved</li> </ul>
<b>Outcome</b>	Documented performance indicators to measure and evaluate the success of the Service Plan
<b>Result</b>	Service Plan strategies are supplemented by performance indicators and targets

## 16 Implementation

The final draft Service Plan should be submitted to the governance team and supplied to contributing stakeholders and organisations, as well as senior management of facilities and health services for comment and approval prior to implementation.

Implementation involves the translation of the service plan into a developmental or operational process. These functions are performed by service operators, service managers or an implementation team. A thorough handover of the plan facilitates the initial stages of implementation.

Whilst planning attempts to take into account a myriad of factors surrounding the future- including political, social, cultural and economic factors, it is always possible for unforeseen events to compromise effective implementation. As a result, it can be unpredictable and lead to protracted or contested processes. Maintaining open forms of communication and strategies for negotiation between implementers and planners provides a solid foundation to proceed to successful implementation (Eagar et al., 2001). Ensuring the following factors are incorporated into the handover between the planning and implementation teams will contribute to successful implementation (Eagar et al., 2001):

- Good coordination between the planning and implementation teams
- Incorporation of appropriate mechanisms to resolve implementation difficulties, such as issues registries and risk management plans
- Clearly assigned and monitored responsibilities for implementation actions
- Appropriate management controls and incentives in place
- Preventing resistance to implementation at an operational level by involving and communicating with the community and service providers at an appropriate time
- Adequate workforce preparation in numbers, mix, training, skills and expertise
- Adequate resources allocated to implementation in the form of personnel and time
- Adequate training for new systems, procedures and technology for all those affected by the plan

## Details

<b>Activity</b>	Service plan implementation
<b>Rationale</b>	To ensure the service plan and related documents are translated into developmental or operational processes
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Identify implementation team</li> <li>▪ Manage thorough handover from planning team to implementation team</li> <li>▪ Ensure mechanisms for communication and negotiation exist to prevent implementation failure</li> </ul>
<b>Outcome</b>	The goals and objectives of the service planning process are realised by appropriate change management and development processes
<b>Result</b>	Implementation plan supplementing service plan

## 17 Monitoring and Evaluation

Monitoring during planning implementation allows the opportunity to adjust and review service plan strategies, and is most adeptly performed using progress reports that measures observations against the performance indicators established earlier. Evaluation of the service plan is the concluding assessment of the value and worth of the planning process, and its subsequent output of a service planning document and its implementation processes.

Evaluation of a service plan and its implementation seeks to inform and assist future planning efforts and should involve a series of the initial stakeholders- service providers, patients, consumers and health professionals. The evaluation design will reflect the initial goals and objectives formulated at the beginning of the planning process.

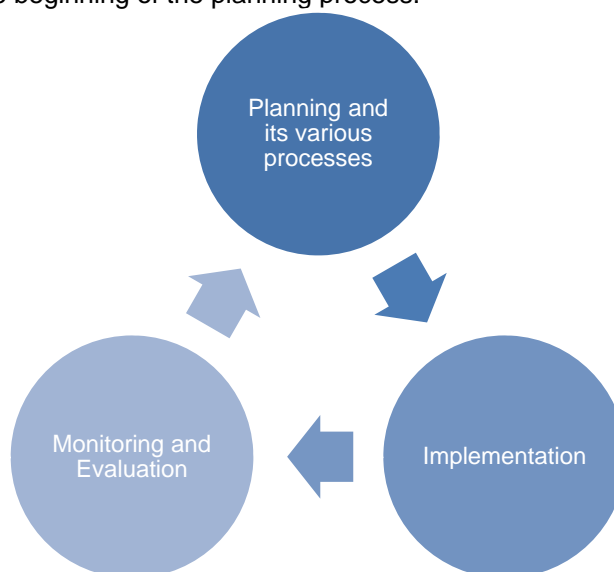


Figure 14 The cyclical process of planning, implementation and monitoring and evaluation

## Details

<b>Activity</b>	Monitoring and evaluation
<b>Rationale</b>	To assess the service planning and implementation process and to inform and assist future planning efforts
<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Assign evaluation team</li> <li>▪ Undertake monitoring and evaluation techniques appropriate to service plan and implementation</li> <li>▪ Report to planning and implementation teams the results of the assessments</li> </ul>
<b>Outcome</b>	Assessment of planning and implementation processes and feedback for future planning efforts
<b>Result</b>	Evaluation report



## 18 Summary

Below is a summary of the process of developing a service plan:

Process/Activity	Rationale	Outcome
<b>Goal Setting</b>	To identify the desired future state(s) to result from undertaking the service planning exercise	Clear direction for planning process
	<ul style="list-style-type: none"> <li>▪ Identify and categorise the desired future state(s), establish consensus within the planning team</li> <li>▪ Translate the desired future state(s) into tangible goals and objectives</li> </ul>	A Goal and Objectives Statement in the initial part of the Service Plan
<b>Contextual Analysis</b>	To analyse, assess and reference relevant government, corporate and organisational policies, standards and guidelines for the services being investigated	Regulations, guidelines and broader organisational goals are accounted for
	<ul style="list-style-type: none"> <li>▪ Perform a comprehensive literature research to gather all relevant documents</li> <li>▪ Consult with the stakeholders and planning team for their policy views and strategic directions</li> </ul>	Output document of service planning process is in alignment with overall system health directions and related policies, guidelines and practice standards.
<b>Stakeholder Engagement</b>	To gain the perspective and interests of a range of stakeholders within the plan's scope and assess their relative importance and influence	Greater depth and breadth of understanding of issues affecting or impacting stakeholders consulted
	<ul style="list-style-type: none"> <li>▪ Identify stakeholders relevant to plan's scope</li> <li>▪ Perform stakeholder analysis</li> <li>▪ Consult and engage stakeholders using a variety of techniques</li> </ul>	Issues Paper to outline issues arising from groups consulted
<b>Catchment Identification</b>	To identify the location of the service and the proximity of the population who are to use the health service(s)	Catchments are well defined and consensus within planning team is reached
	<ul style="list-style-type: none"> <li>▪ Define the location of the service(s)</li> <li>▪ Define the primary, secondary and tertiary catchment areas for the service(s)</li> <li>▪ Agree upon the catchment size and population</li> <li>▪ Identify the population that the service(s) will serve in each catchment including main population of primary catchment and inflows</li> <li>▪ Include a brief description of the geography, history and local economy of the area for each catchment</li> <li>▪ Include a map if necessary</li> </ul>	Planning process for service(s) is specific to defined catchments
<b>Needs Assessment</b>	To identify the health needs of the catchment population using quantitative and qualitative techniques and in consultation with experts in the selected health service(s)	Comprehensive health needs profile is available for the selected catchment
	<ul style="list-style-type: none"> <li>▪ Consultation with clinical experts, consumer representatives, researchers and service managers</li> <li>▪ Describe demographic and socioeconomic characteristics of the population</li> <li>▪ Assess region/nation-wide epidemiological and health status data</li> <li>▪ Collect and analyse health service data</li> <li>▪ Describe geographic factors impacting on need</li> <li>▪ Supplement quantitative data with opinions and needs as expressed by health professionals, service providers and the greater community</li> </ul>	Needs statement

Process/Activity	Rationale	Outcome
<b>Existing Services Identification</b>	To identify current health service supply, health service utilisation and service delivery models	A clear understanding of current health service supply and utilisation and the models of care
	<ul style="list-style-type: none"> <li>▪ Identify current health service supply</li> <li>▪ Describe the services currently provided across the area</li> <li>▪ Collect current health service utilisation data and analyse patterns and trends in use</li> <li>▪ Describe the service models being used to deliver patient care, visiting key providers of services if required</li> <li>▪ Discuss health service delivery issues with key stakeholders and staff</li> </ul>	A profile of current health services
<b>Demand Projections</b>	To identify future demand for health services by service types and specialties	A detailed statistical table of demand projections by service type, mode and specialty and agreed measures
	<ul style="list-style-type: none"> <li>▪ Define the base, target years and intervals for demand projections</li> <li>▪ Obtain appropriate population projections for the catchment</li> <li>▪ Consult and identify health service data for the defined catchment</li> <li>▪ Use a projection technique to project the future health service demand in the projected population</li> <li>▪ Produce forecasts based on projections adjusted and verified in expert consultation with service specialists</li> </ul>	Health Service Demand Profile
<b>Gap Analysis</b>	To identify the required changes to service capacity to address the health service need and demand to target year	A detailed table of required health services and planning units to meet future health demands
	<ul style="list-style-type: none"> <li>▪ Compare the findings from existing and proposed services and demand projections</li> <li>▪ Identify the gap in health services and quantify as planning units including a mix of overnight beds, same day hospital beds, operating theatres, diagnostic units and ambulatory care units</li> </ul>	Service Gap Profile
<b>Service Model Selection</b>	To identify the service model to best address the health service gap identified	Preferred service model selected
	<ul style="list-style-type: none"> <li>▪ Develop service model options to address future demand for services</li> <li>▪ Consider benchmarks, health improvement, performance and overall benefits achieved by each service model</li> <li>▪ Consult with the stakeholders on the options and undertake formal selection procedures</li> <li>▪ Select the preferred service model</li> </ul>	Preferred service model description
<b>Proposed Service Profile</b>	To translate the selected service model into service profile by quantifying all necessary requirements	Quantities of physical, personnel and system required
	<ul style="list-style-type: none"> <li>▪ Define specific resources needed in terms of physical, personnel and systems required</li> <li>▪ Quantify the physical requirements as KPUs in forms of beds, chairs, rooms, cubicles, units, machines and devices by service type, category and specialty</li> </ul>	Proposed service profile description

Process/Activity	Rationale	Outcome
<b>Operational considerations</b>	To identify and consider various operational components including: location, hours of operation, regulations, organisational structure and staffing, to operate services efficiently	Operational considerations of service profile taken into account
	<ul style="list-style-type: none"> <li>▪ Consult relevant stakeholders to identify location and hours of operation</li> <li>▪ Define management structure and determine staff requirements</li> <li>▪ Assess personnel and expertise supply and demand</li> <li>▪ Determine appropriate action to match personnel demand and supply over course of plan</li> </ul>	Detailed documentation staff requirements according to hours of operation, personnel plan and management structure where relevant
<b>Service Relationships</b>	To identify all service entities and demonstrate the relationships with one another	Comprehensive knowledge of other health services within the area and a diagram showing relationships of services in a detailed view
	<ul style="list-style-type: none"> <li>▪ Identify the service entities</li> <li>▪ Briefly profile their services and capacity if unknown</li> <li>▪ Develop a relationship diagram to show the identified groups</li> <li>▪ Describe the potential channels of patient referral and transfer between health services depending on the services provided</li> </ul>	Documentation of potential channels of patient movement between health services and Relationship Diagram
<b>Financial Assessment</b>	To determine a capital and recurrent budget for the proposed services	Comprehensive breakdown of expected resource allocations within the preferred service model
	<ul style="list-style-type: none"> <li>▪ Estimate capital and recurrent costs</li> <li>▪ Determine savings or investments required</li> <li>▪ Identify sources of funds where growth is required</li> </ul>	Budget proposal to accompany preferred service model
<b>Performance Assessment</b>	To set measurable and attainable performance indicators with accompanying targets, resource allocations, responsible personnel and time frame	Documented performance indicators to measure and evaluate the success of the Service Plan
	<ul style="list-style-type: none"> <li>▪ Identify performance indicator for each strategy of the Service Plan</li> <li>▪ Negotiate realistic targets, resource allocations and time frames with personnel responsible and involved</li> </ul>	Service Plan strategies are supplemented by performance indicators and targets
<b>Implementation</b>	To ensure the service plan and related documents are translated into developmental or operational processes	The goals and objectives of the service planning process are realised by appropriate change management and development processes
	<ul style="list-style-type: none"> <li>▪ Identify implementation team</li> <li>▪ Manage thorough handover from planning team to implementation team</li> <li>▪ Ensure mechanisms for communication and negotiation exist to prevent implementation failure</li> </ul>	Implementation plan supplementing service plan
<b>Monitoring and Evaluation</b>	To assess the service planning and implementation process and to inform and assist future planning efforts	Assessment of planning and implementation processes and feedback for future planning efforts
	<ul style="list-style-type: none"> <li>▪ Assign evaluation team</li> <li>▪ Undertake monitoring and evaluation techniques appropriate to service plan and implementation</li> <li>▪ Report to planning and implementation teams the results of the assessments</li> </ul>	Evaluation report

### 3 References and Further Reading

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